DOCUMENT RESUME

ED 479 004 UD 035 766

TITLE	Education Watch: Montana. Key Education Facts and Figures. Achievement, Attainment and Opportunity. From Elementary School through College.
INSTITUTION	Education Trust, Washington, DC.
PUB DATE	2003-00-00
NOTE	12p.; For other state reports, see UD 035 740-790. For the summary of national data, see UD 035 702; for summary achievement gap data, see UD 035 701.
AVAILABLE FROM	The Education Trust, 1725 K Street, NW, Suite 200, Washington, DC 20006. Tel: 202-293-1217; Fax: 202-293-2605; Web site: http://www.edtrust.org.
PUB TYPE	Numerical/Quantitative Data (110)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	*Academic Achievement; Advanced Placement; American Indians; Black Students; *Educational Attainment; *Educational Finance; Elementary Secondary Education; Enrollment Trends; Equal Education; Grade 4; Grade 8; Graduation; Hispanic American Students; Low Income Groups; Mathematics Skills; *Minority Group Children; Postsecondary Education; Poverty; Racial Differences; Reading Skills; Special Needs Students; State Aid ; *State Standards; Student Placement; *Teacher Competencies; White Students
IDENTIFIERS	*Achievement Gap; Montana; National Assessment of Educational Progress

ABSTRACT

This report compares Montana's reading and mathematics performance on the most recent administrations of the state assessment with performance on the National Assessment of Educational Progress (NAEP). To indicate how Montana is doing in narrowing the academic achievement gap between poor and non-poor students, the report presents NAEP data by family income. The report presents other state-level data on K-college education, including demographic distribution across each educational level, participation and success in Advanced Placement, percentage of students taking high-level courses, school funding gaps, and high school and college graduation rates. In 2002, 68 percent of all 4th graders performed at the proficient level or above on the state's reading assessment; 80 percent of Whites and 65 percent of Latinos performed at this level. On the 1998 NAEP 4th grade assessment, 37 percent of Montana students were at the proficient level or above. On the 2002 state mathematics assessment, 76 percent of all 8th graders were proficient or above, with 73 percent of Whites and 53 percent of Latinos performing at this level. The 2000 NAEP showed 37 percent of Montana 8th graders at the proficient level or better. Low-income 4th graders in Montana performed second among states on the 1998 NAEP reading assessment. Montana's low-income 8th graders performed better than low-income 8th graders in any other state on the 2002 NAEP math assessment. Native American students are underrepresented in Advanced Placement (AP) exam taking and in gifted and talented programs, and they are overrepresented in special education. About 46 percent of Montana high school students enroll in college, compared to 54 percent nationwide. Nearly one in five Montana

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secondary classes are taught by teachers' lacking a major or minor in the field. Districts with higher child poverty rates and higher minority enrollments have the fewest state and local dollars to spend per student. (SM)

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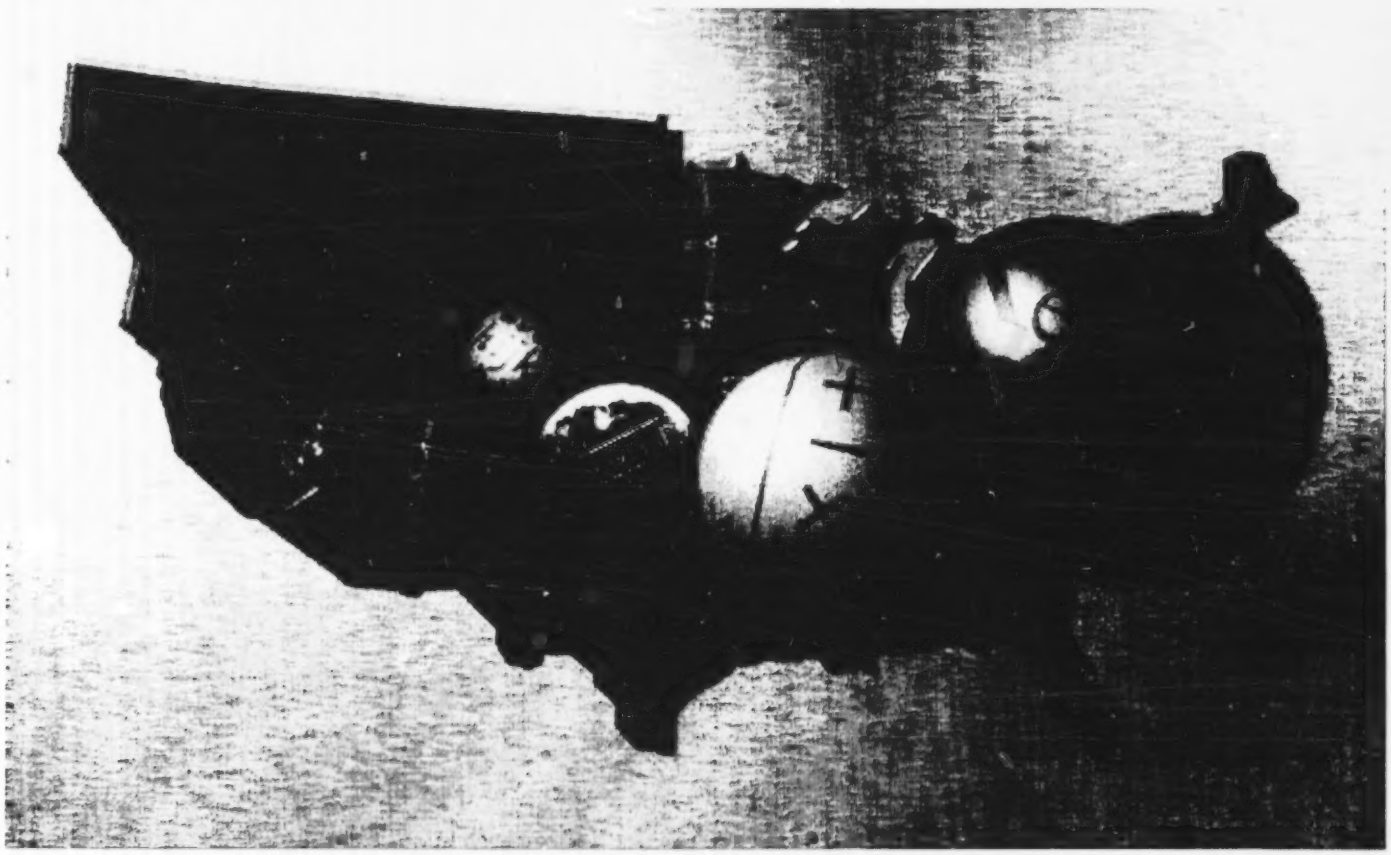
Education Watch

MONTANA

Key Education Facts and Figures

Achievement, Attainment and Opportunity



From Elementary School through College

Prepared by the Education Trust, Inc.

Winter 2002-2003

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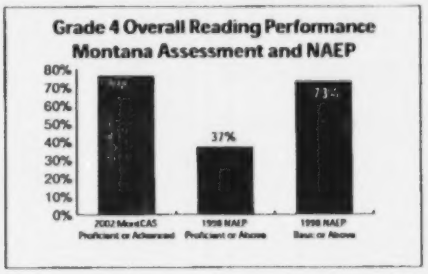
Achievement

Montana Elementary Reading Achievement

Perhaps the most important task of elementary schools is to teach students to read well. Strong reading skills are the key to later success, both in school and in life.

The following charts compare your state's reading performance on the most recent administrations of the state assessment and the National Assessment of Educational Progress (NAEP). Under the No Child Left Behind (NCLB) legislation, every state must have a plan in place to ensure that all students are meeting the state's standard of proficiency by 2013-14. Results are reported below as the proportion of students reading at the "proficient" level, or the state-defined equivalent.

Are Montana students proficient in reading?

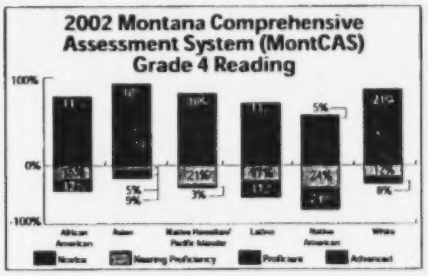


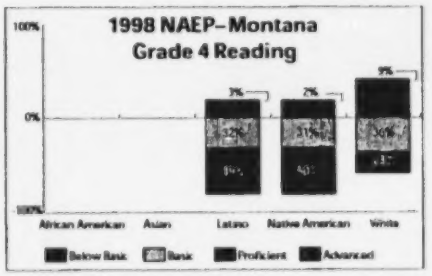
Results from the 2002 Montana Comprehensive Assessment System (MontCAS) show that 68% of all 4th graders in Montana are proficient or above in reading.

On the 1998 National Assessment of Educational Progress (NAEP), 73% of Montana 4th graders performed at the basic level or above in reading, while only 37% performed at proficient or above.

Do results vary by group?

Because it's important to look underneath overall averages to see how different groups of students are performing, NCLB further requires states to report achievement data by group. In this way, states can draw attention to the students who need the most help. The charts below show the distance each group has to go in order to reach the proficient level on the state assessment and on NAEP.





On Montana's reading test, 80% of White 4th graders score at the proficient or advanced level, compared to 65% of Latino 4th graders. On the other end of the spectrum, 17% of Latino 4th graders scored at the novice level, compared to 8% of White 4th graders.

Is Montana performance improving on NAEP?

Grade 4 Reading

	NAEP Scale Score		Change from 1994-1998	
	1994	1998	State Change	Biggest Gainer
African American	—	—	—	+17 (MN)
Latino	208	207	-1	+15 (CT)
Native American	—	—	—	+17 (AZ)
White	226	230	+4	+9 (LA)
All	222	226	+4	+10 (CT)

Note: A difference of 10 points is roughly equivalent to a year's worth of learning

Between 1994 and 1998, Montana scores on the NAEP 4th grade reading assessment increased by 4 points. The biggest state gain over that period was 10 points. From 1994-1998, the gap in Montana between White and Latino students on the NAEP 4th grade reading assessment widened by 5 points.

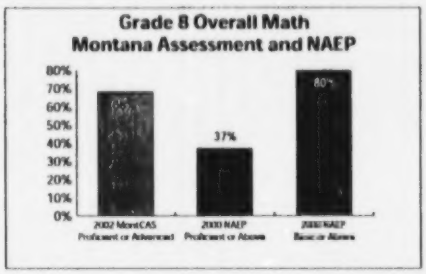
Achievement

Montana Middle Grade Mathematics Achievement

To survive in our information society, all Americans need a solid foundation in mathematics. Middle schools play a particularly central role in assuring that students have not only mastered basic computation, but are also developing the mathematical thinking and problem-solving skills so important in the mathematics courses they will take in high school.

As we showed with reading on the previous page, the following charts compare students' mathematics performance on the most recent administrations of the state assessment and the National Assessment of Educational Progress (NAEP). NCLB legislation requires every state to have a plan in place to ensure that all students are meeting the state's standard of proficiency by 2013-14. For this reason, results are reported as the proportion of students at the "proficient" level, or the state-defined equivalent.

Are Montana students proficient in mathematics?

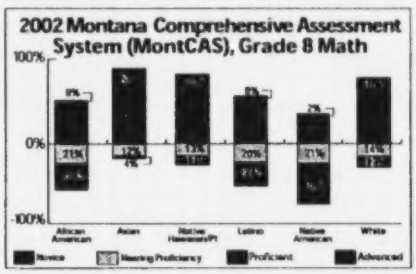


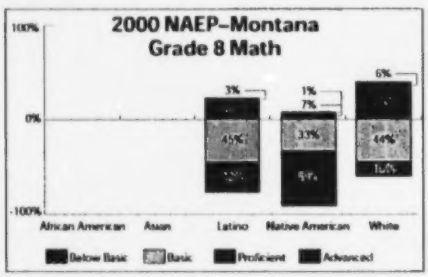
Results from the 2002 Montana Comprehensive Assessment System (MontCAS) show that 76% of all 8th graders in Montana in mathematics.

On the 2000 National Assessment of Educational Progress (NAEP), 80% of Montana 8th graders performed at the basic level or above in mathematics, while only 37% performed at proficient or above.

Do results vary by group?

Because it's important to look underneath overall averages to see how different groups of students are performing, NCLB further requires states to report achievement data by group. In this way, states can draw attention to the students who need the most help. The charts below show the distance each group has to go in order to reach the proficient level on the state assessment and on NAEP.





On Montana's mathematics test, 73% of White 8th graders scored at the proficient or advanced level, compared to 53% of Latino 8th graders. On the other end of the spectrum, 27% of Latino 8th graders scored at the "novice" level, compared to 12% of White 8th graders.

Is Montana's performance improving on NAEP?

Grade 8 Mathematics

	NAEP Scale Score		Change from 1990-2000	
	1990	2000	State Change	Biggest Gainer
African American	—	—	—	+23 (NC)
Latino	263	276	+13	+51 (NC)
Native American	257	253	-4	+16 (ND)
White	284	290	+6	+29 (NC)
All	281	287	+6	+30 (NC)

Note: A difference of 10 points is roughly equivalent to a year's worth of learning

Between 1990 and 2000, Montana scores on the NAEP 8th grade mathematics assessment increased by 6 points. The biggest state gain over that period was 30 points. From 1990-2000, the gap in Montana between White and Native American students on the NAEP 4th grade mathematics assessment widened by 10 points.

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Achievement

How Does Montana's Achievement Compare?

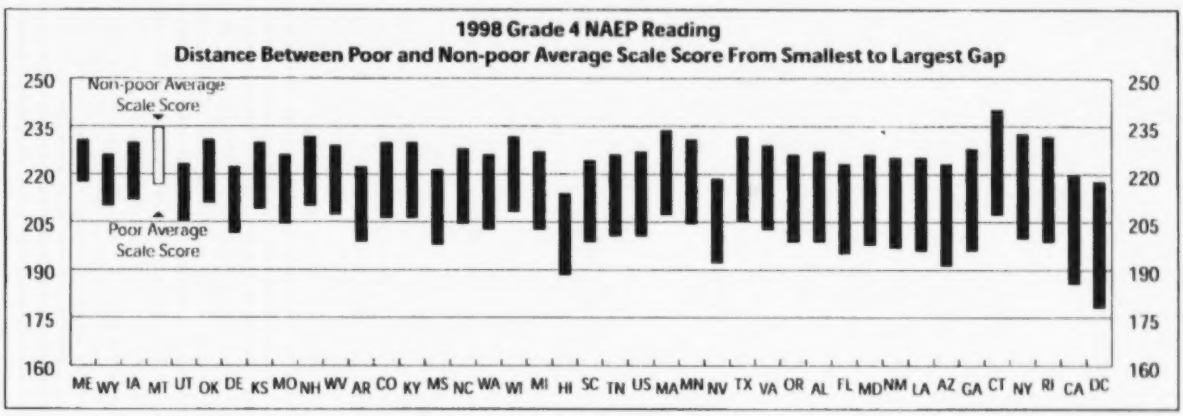
The win-win pattern states want to see is rising student achievement combined with narrowing gaps between student groups. On these pages we show where states are in meeting this twofold goal with respect to either African American, Latino or low-income students. For this report, we chose to feature low-income students in your state. While we focus here on one group's story, a complete picture of how your state is doing with all students can be found on Ed Watch Online at www.edtrust.org.

Readers should note that progress on one part of the goal does not necessarily mean progress on the other. For example, a state can have a narrow achievement gap between White and minority students, but the achievement levels of both groups are low. Likewise, minority achievement can be high relative to other states, but low in relation to White achievement in their own state, leaving a large gap. Most encouraging are the states that are seeing progress on both fronts.

NAEP Grade 4 Reading

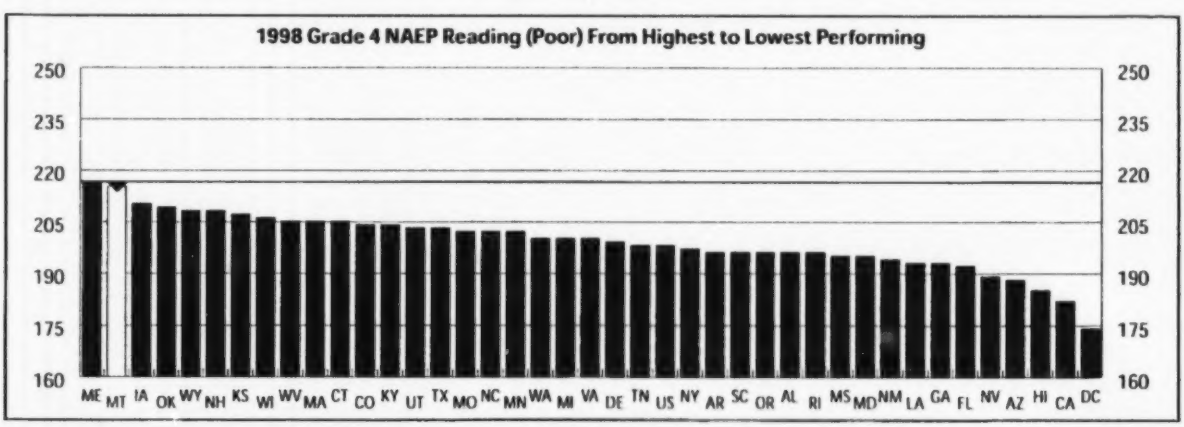
How does Montana's poor/non-poor achievement gap compare?

The chart below shows the reading achievement gap between your state's poor and non-poor fourth-graders on NAEP. The top of each bar represents the average scale score for non-poor students and the bottom is that for Poor students. States are ordered from the narrowest to the widest gap.


1998 Grade 4 NAEP Reading
Distance Between Poor and Non-poor Average Scale Score From Smallest to Largest Gap
Non-poor Average Scale Score
Poor Average Scale Score
250
235
220
205
190
175
160
ME WY IA MT UT OK DE KS MO NH WV AR CO KY MS NC WA WI MI HI SC TN US MA MN NV TX VA OR AL FL MD NM LA AZ GA CT NY RI CA DC

How do poor students' scores in Montana compare?

Some states are far more successful teaching minority and low-income students than others. Indeed the achievement gap between students of the same group in high- and low-performing states is often larger than the gap between non-poor and poor students within states. The following chart shows the average scale scores of poor fourth-graders in all states that participate in NAEP.


1998 Grade 4 NAEP Reading (Poor) From Highest to Lowest Performing
250
235
220
205
190
175
160
ME MT IA OK WY NH KS WI WV MA CT CO KY UT TX MO NC MN WA MI VA DE TN US NY AR SC OR AL RI MS MD NM LA GA FL NV AZ HI CA DC

Note: A difference of 10 points is roughly equivalent to one year's worth of learning.

Montana—along with IA and UT—has the third smallest poor/non-poor achievement gap on NAEP reading. Low-income 4th graders in Montana perform second among states on the 1998 NAEP grade 4 reading assessment.

Note: Where neither African American nor Latino students comprise at least 3% of the public K-12 enrollment in a state, we presented data for low-income students.

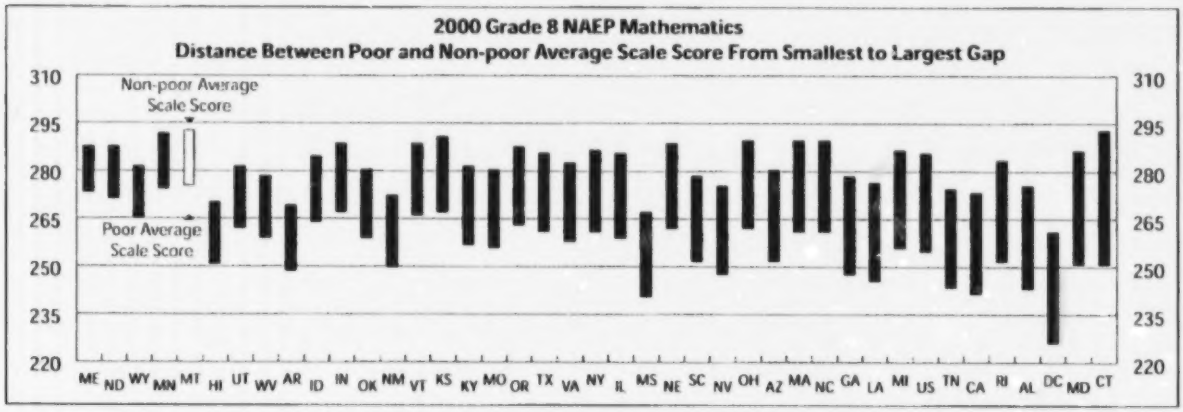
Achievement

How Does Montana's Achievement Compare?

NAEP Grade 8 Mathematics

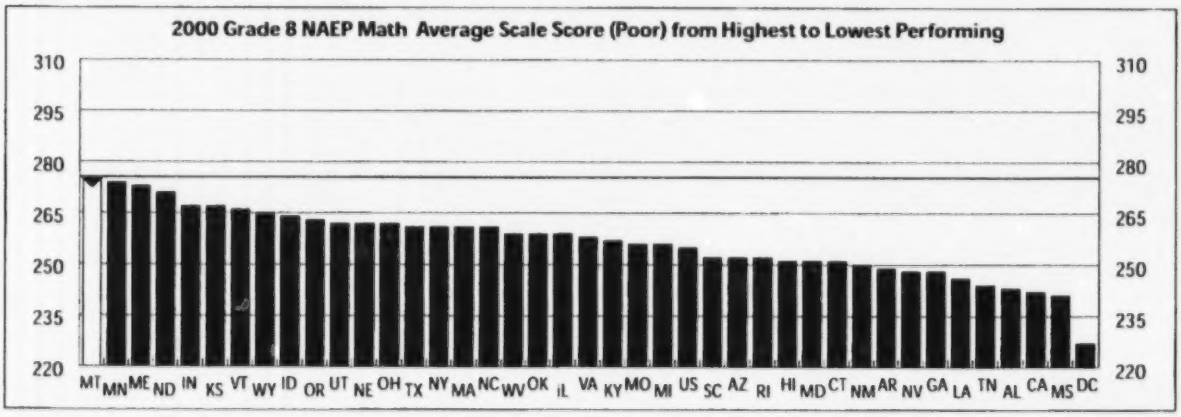
How does Montana's poor/non-poor achievement gap compare?

As with reading, the chart below shows the mathematics achievement gap between your state's poor and non-poor eighth-graders on NAEP. The top of each bar represents the average scale score for non-poor students and the bottom is that for poor students. States are ordered from the narrowest to the widest gap.


2000 Grade 8 NAEP Mathematics
Distance Between Poor and Non-poor Average Scale Score From Smallest to Largest Gap
Non-poor Average Scale Score
Poor Average Scale Score
310
295
280
265
250
235
220
ME ND WY MN MT HI UT WV AR ID IN OK NM VT KS KY MO OR TX VA NY IL MS NE SC NV OH AZ MA NC GA LA MI US TN CA RI AL DC MD CT

How do poor students' scores in Montana compare?

Some states are far more successful teaching minority and low-income students than others. Indeed the achievement gap between students of the same group in high- and low-performing states is often larger than the gap between non-poor and poor students within states. The following chart shows the average scale scores of poor eighth-graders in all states that participate in NAEP.


2000 Grade 8 NAEP Math Average Scale Score (Poor) from Highest to Lowest Performing
310
295
280
265
250
235
220
MT MN ME ND IN KS VT WY ID OR UT NE OH TX NY MA NC WV OK IL VA KY MO MI US SC AZ RI HI MD CT NM AR NV GA LA TN AL CA MS DC

Note: A difference of 10 points is roughly equivalent to one year's worth of learning.

Montana—along with MN—has the fourth smallest poor/non-poor achievement gap on NAEP math. Low-income 8th graders in Montana perform better than low-income 8th graders in any other state on the 2000 NAEP grade 8 math assessment.

Note: Where neither African American nor Latino students comprise at least 3% of the public K-12 enrollment in a state, we presented data for low-income students.

Attainment

High School and College Success

In earlier times, young people with poor reading and math skills could still succeed if they were willing to work hard. Now they need more. Not only do young people need to graduate from high school, but most will also need at least some postsecondary education or training.

Montana's Student Demographics, 1998-99

Population and enrollments: These data offer a picture of the student population in your state. Comparing the demographic distribution of students across each educational level shows what happens to children as they journey through the education system. Significant differences should raise questions about equity.

	Population, age 5-24	Public K-12	Two Year Colleges	Four Year Colleges
African American	<0.5%	1%	<0.5%	<0.5%
Asian	1%	1%	<0.5%	1%
Latino	2%	2%	2%	1%
Native American	9%	10%	28%	6%
White	87%	87%	62%	83%
Other	—	—	8%	9%
Total	100%	100%	100%	100%
Number	260,148	159,988	6,088	36,152

Participation and Success in Advanced Placement, 2000–2001

Composition of AP test takers: Students take Advanced Placement (AP) exams after completing year-long AP courses, typically among the highest level offered in high schools. In a system where all students have equal access to these opportunities, the percentage of test-takers by race and ethnicity would be proportional to their representation in public K-12 enrollment.

Who Takes AP Tests?

Example: Of all AP test-takers, this proportion were African Americans

	Public K-12 Enrollment	Calculus AB	English Language and Composition	Biology
African American	1%	0%	0%	0%
Asian	1%	3%	2%	3%
Latino	2%	2%	1%	1%
Native American	11%	0%	0%	3%
White	86%	95%	97%	92%
Total	100%	100%	100%	100%
Number	154,875	222	210	145

Success rates of AP test takers: A school system's responsibility does not end at enrolling students in AP courses. While AP test taking offers a picture of access to AP coursework, relative achievement on these exams is an important measure of student/teacher preparedness. Huge variability in the proportion of test takers that earn a 3 or greater should raise questions about the quality of instruction or educational resources provided in courses labeled Advanced Placement.

Who Scores a 3, 4 or 5?

Example: Of all African Americans who took the AP Calculus exam, this percent scored a 3, 4 or 5.

	Calculus AB	English Language and Composition	Biology
African American	•	•	•
Asian	•	•	•
Latino	•	•	•
Native American	•	•	•
White	59%	65%	51%
Total	60%	65%	50%

*data are not reported where there were less than 25 test takers in the state

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Attainment

High School and College Success

Who Makes it Through High School?

Montana's 8th Graders vs. Diplomas

8th graders= 1995-96; diplomas= 2000

	Grade 8	Diploma
African American	45	23
Asian	85	82
Latino	163	134
Native American	1,246	681
White	11,803	9,983
Total	13,342	10,903

In order to determine equity in attainment rates, we compare regular diploma recipients with the number of 8th graders four years earlier. These show the flow of groups of students from middle school to high school graduation. Although these data do not track individual students from year to year, they should paint a fairly representative picture of who makes it through high school.

Who Makes It Through College?

Good jobs for young people today increasingly require at least some postsecondary training with the greatest advantage going to those with a B.A. or better. Over the last decade, college-going rates have gone up across the country. Below we offer several indicators of postsecondary trends in your state compared to the performance of the top states on each indicator.

Participation and Persistence in Postsecondary

	Montana	Top States*
H.S. freshmen enrolling in any U.S. college w/in 4 years	46%	54%
1st year community college students returning their 2nd year	n/a	63%
Freshmen at 4 year returning their sophomore year	67%	83%
First-time full-time freshmen completing a BA w/in 6 years	38%	61%

*Top States= median of top 5 performing states (Measuring Up 2002).

In order to determine equity in attainment rates, we've compared freshmen enrollments to bachelor's degrees four years later. We've also provided official data on the six-year graduation rates for students in your state's premier public university. Taken together, these should paint a fairly representative picture of who makes it through college.

6-Year Graduation Rates at State Flagship Campus, 2001

(1995-96 First-time, full-time freshmen)

	University of Montana
African American	25%
Asian	30%
Latino	25%
Native American	21%
White	41%
Total	40%

Montana Freshmen vs. Degrees Awarded

*First-time full-time and part-time freshmen

Freshmen= 1996-97; Degrees= 2000

	Freshmen	Bachelors
African American	26	31
Asian	57	46
Latino	103	175
White	6,746	4,315
Other	1,316	604
Total	8,248	5,171

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Opportunity

Opportunity Gaps

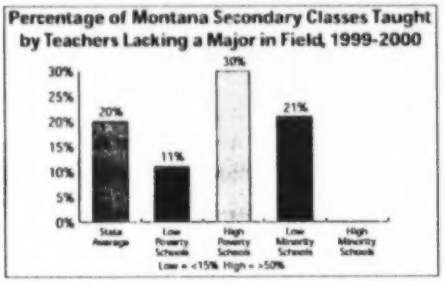
Differences in achievement and attainment between groups of students often have roots in differences in the availability of educational resources. To begin to understand achievement gaps among their students, states and districts should look at the distribution of qualified teachers, challenging curricula as well as funds.

Teacher Gaps

Who Teaches Whom?

Research is very clear: good teachers make good schools. Students who get several effective teachers in a row will soar no matter what their family backgrounds, while students who have even two ineffective teachers in a row rarely recover. The below chart shows one measure of the distribution of teacher talent in your state.

Under NCLB, every state and school district must make sure that low-income students receive their fair share of qualified and experienced teachers. Readers should investigate their state's plan for placing a highly qualified teacher in every classroom.



According to national survey data, 1 in 5 of Montana's secondary classes are taught by teachers lacking either a major or minor in the field. Nationally students in high poverty, high minority schools continue to receive less than their fair share of teacher talent.

Challenging Curricula

Industry has joined colleges in the demand for individuals with high-level knowledge and skills. This means that all students need a rigorous curriculum in order to be prepared for success, whether they choose college or work. Yet too few students have the opportunity to gain these skills through rigorous math and science courses.

High Level Course-Taking, 1999-2000

Percentage of students who take high-level courses

Course-taking is an indicator of the amount of access students have to challenging subject matter and the essential skills it develops for life after high school. States should examine differences in access for different student groups.

	Montana	Top States*
8th graders taking Algebra	n/a	30%
9th-12th graders taking at least 1 upper-level math course	n/a	57%
9th-12th graders taking at least 1 upper-level science course	n/a	39%

*Top States= median of top 5 performing states (Measuring Up 2002)

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Opportunity

Opportunity Gaps

Special student placements, 2000

School programs vary a great deal in their level of curriculum, expectations, and instruction. If there is equity in placements, the number of Latino students, for example, placed in gifted and talented programs and in special education should be proportional to Latinos enrolled in K-12. Although suspensions are not precisely an academic program, we include data about them because too often they represent a placement out of the system altogether.

Example for reading this chart: Of all public K-12 enrollments in your state, this proportion were African Americans.

	% Public K-12 Enrollment	% Gifted And Talented	% Special Education	% Suspensions
African American	1%	<0.5%	1%	1%
Asian	1%	1%	<0.5%	<0.5%
Latino	2%	1%	2%	2%
Native American	11%	6%	17%	26%
White	86%	91%	79%	71%
Total	100%	100%	100%	100%
Number	154,875	8,642	12,846	6,189

Investments

Funding Gaps: Education Dollars by District Poverty and Minority Enrollment, 1999-2000

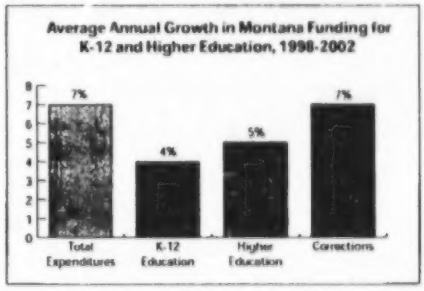
Most states spend considerably fewer state and local resources on the education of poor children than they do on educating more affluent children. The analyses below show the difference between resources available to the quarter of districts in the state with the most poor children and the quarter of districts with the fewest poor children.

In Montana, districts with the highest child poverty rates have $1,535.42 fewer state and local dollars to spend per student compared with the lowest-poverty districts. That translates into a total $38,385.50 for a typical classroom of 25 students.

Districts with the highest minority enrollments have $1,047.77 fewer state and local dollars to spend per student compared with the lowest-minority districts. That translates into a total $26,194.25 for a typical classroom of 25 students.

State Funding for K-12 and Higher Education

It is important to examine changes in state education spending in the context of the overall budget as well as expenditures in other areas.



College Affordability Gaps, 2001

College costs often discourage students with limited means from seeking further education. States can lessen this problem by targeting their aid dollars to low-income students and by providing affordable colleges within the reach of low-income families.

	Montana	Top States*
Amount state provides to low-income students for every $1 of federal Pell grants	$0.07	$1.08
Share of income that poorest families need to pay for tuition at lowest priced colleges	22%	8%

*Top States= median of top 5 performing states (Measuring Up 2002)

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References

State assessment results were collected from state education department websites.

High Level Course-taking, Participation and Persistence, and Affordability data: Measuring Up 2002: The State-By-State Report Card for Higher Education. The National Center for Public Policy and Higher Education (2002). Measuring Up defines "Top States" as the median value of the top five performing states. http://measuringup.highereducation.org/2002/reporthome.htm

NCAA 6 yr graduation rates: www.ncaa.org

All remaining indicators contain data from The Education Watch Interactive State & National Data Site: www.edtrust.org

Full definitions and sources for all indicators on Education Watch Online can be found at: http://204.176.179.36/dc/edtrust/navlibs/databookdef2.html

NAEP notes:

- NAEP data were not reported for race/ethnic groups where sample size is too small for reliable estimate.
- State change reported on pages 2 and 3 may not be statistically significant.
- NAEP cross-state tables (pages 4 and 5) are presented for either African Americans or Latinos, whichever is a greater proportion of 2000-2001 public K-12 enrollment. Where neither African American nor Latino students comprise at least 3% of the public K-12 enrollment in a state, we presented data for low-income students.

Cross-state table note (p. 4 & 5): For both the gap and minority achievement charts, states that share the same gap size or scale score are ordered alphabetically and share the same rank order in the text analysis. The nation is not included in cross state rank order.

Public K-12 enrollment note: These data may vary across different tables because we used data from consistent years within each table to provide the most accurate context.

Advanced Placement (AP) note: The number of non-respondents and Native Americans was subtracted from the total test-takers and public K-12 enrollment so the reported/known percentages would equal 100%. AP results for Native Americans are not reported as a separate category because we did not deem the data reliable.

Teacher gap data refer to secondary classes in the core subjects.

Rounding note: Due to rounding, the data where we present distributional percentages may not total to 100. We have indicated <0.5% where data would have rounded to zero.

Average annual growth in state funding per National Association of State Budget Officers (NASBO) data..

Education Watch Interactive State and National Data Site

Much of the data in this report—and many additional education indicators—is available on EdWatch Online—our interactive State and National Data Site, which allows users to compare student achievement and opportunity data across states and for the nation. To access the site, go to our website at www.edtrust.org.

Dispelling the Myth Online

While these reports focus on state-level data, Dispelling the Myth Online—another of our online data tools—allows users to mine school-level achievement data in almost every state. This easy-to-use, fully interactive Web site allows you to use school demographic and performance criteria of your choice to conduct rapid searches for high-performing or high-improving schools in nearly every state in the nation for all subjects and grade-levels where state assessment data is available in that state.

To access the full collection of Dispelling the Myth analyses, tools, and documentation, go to our website at www.edtrust.org.

The Education Trust was created to promote high academic achievement for all students at all levels, kindergarten through college. While we know that all institutions could better serve their students, our work focuses on the schools and colleges most often left behind in efforts to improve education: those serving Latino, African American, Native American and low-income students.

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